

Appln No. 10/529,309

Response to Office Action mailed January 25, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (previously presented) An apparatus for generating a periodically varying electrical signal for creating a periodically varying electrical field between electrodes of an ion mobility spectrometer, comprising:

an output port;

a first tuned circuit for being electrically coupled to an external power source and for, in isolation, providing a first periodically varying electrical signal having a first frequency, the first tuned circuit coupled to the output port for providing an output electrical signal having a component at the first frequency thereto; and,

a second tuned circuit for being electrically coupled to an external power source and for providing a second periodically varying electrical signal having a second frequency different from the first frequency, the second tuned circuit coupled to the first tuned circuit for adding a component at the second frequency to the output electrical signal.

Claim 2 (original) An apparatus according to claim 1, wherein the first tuned circuit comprises:

at least a first inductor having a primary winding and a secondary winding;

a capacitive load coupled to the secondary winding of the at least a first inductor and including a first tunable capacitance and electrodes of an ion mobility spectrometer; and,

a load resistor coupled to the primary winding.

Claim 3 (previously presented) An apparatus according to claim 2, wherein the second tuned circuit comprises at least a second inductor having a primary winding and a secondary winding, and wherein the secondary winding of the at least a second inductor is electrically coupled to a center-tap of the secondary winding of the at least a first inductor.

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Claim 4 (original) An apparatus according to claim 2, wherein the at least a first inductor comprises two inductors coupled in series one to the other.

Claim 5 (previously presented) An apparatus according to claim 4, wherein the second tuned circuit comprises two inductors coupled in series one to the other, and wherein the two inductors of the second tuned circuit are electrically coupled to a center-tap between the two inductors of the first tuned circuit.

Claim 6 (previously presented) An apparatus according to claim 2, wherein the second tuned circuit comprises two inductors coupled in series one to the other, and wherein the two inductors of the second tuned circuit are electrically coupled to a center-tap on the secondary winding of the at least a first inductor of the first tuned circuit.

Claim 7 (original) An apparatus according to claim 2, wherein the load resistor is selected to ensure approximately sinusoidal variations in electrical currents in the primary winding.

Claim 8 (original) An apparatus according to claim 7, wherein the load resistor is selected such that a desired voltage of the first periodically varying electrical signal is obtained with approximately minimum consumption of power from the external power source.

Claim 9 (original) An apparatus according to claim 1, wherein the first frequency and the second frequency differ by a factor of substantially two.

Claim 10 (original) An apparatus according to claim 1, comprising a pair of electrodes disposed for forming an analyzer region therebetween.

Claim 11 (original) An apparatus according to claim 2, comprising switches electrically coupled to the apparatus for in a first switched mode providing current along a first direction through the primary winding of the at least a first inductor, and for in a second other switched mode

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providing current along a second other direction through the primary winding of the at least a first inductor.

Claim 12 (original) An apparatus according to claim 3, comprising switches electrically coupled to the apparatus for in a first switched mode providing current along a first direction through the primary windings of each one of the at least a first inductor and the at least a second inductor, and for in a second other switched mode providing current along a second other direction through the primary winding of each one of the at least a first inductor and the at least a second inductor.

Claims 13-25 (canceled)